Graft copolymers of methylene lactones and process for emulsion polymerization of methylene lactones

Description of Technology: This invention discloses resilient, acrylic graft polymers comprising .alpha.-methylene lact(one)(am) monomers such as .alpha.-methylene-.gamma.-butyrolactone, and blends of such polymers with thermoplastic matrix resins. This invention also discloses hard, non-resilient, acrylic graft polymers comprising .alpha.-methylene lact(one)(am) monomers such as .alpha.-methylene-.gamma.-butyrolactone, and to blends of such polymers with thermoplastic matrix resins. This invention further discloses a general process for emulsion polymerization of .alpha.-methylene lact(one)(am) monomers such as .alpha.-methylene-.gamma.-butyrolactone and its copolymers.

Patent Listing:

1. **US Patent No. 6,841,627**, Issued January 11, 2005, "Graft copolymers of methylene lactones and process for emulsion polymerization of methylene lactones"

http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6841627

Market Potential: Resilient, acrylic graft polymers are produced by a multi-stage, sequential polymerization technique which comprises alternately producing resilient and nonresilient layers around an acrylic core material. Such materials are often referred to as "core/shell particles" or "core/shell toughened". These resilient polymers are ordinarily mixed with a hard nonresilient thermoplastic methacrylic matrix resin in order to provide toughness in articles molded from the resulting blend. When properly dispersed, the resilient acrylic graft polymer greatly improves the impact strength of the hard matrix resin while maintaining a balance of important physical properties of heat distortion temperature, flexural modulus, tensile strength and tensile elongation.

The acrylic copolymers and compositions of the invention are of use as molded parts, thermoform parts, sheets, films, foams, containers, bottles, pipes, profiles and other articles made in accordance with the invention.

Benefits:

- Improved impact strength
- Balance important physical properties

Applications:

- Acrylic copolymers and compositions

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